

Math 096 - Quiz 10

May 3, 2017

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (4.5 points) Solve each proportion for x . Show your work for full credit.

(a) $\frac{7}{5} = \frac{x}{25}$ $\left(\frac{7}{5}\right)\left(\frac{5}{5}\right) = \frac{x}{25} \Rightarrow x = 35$

(b) $\frac{3}{x} = \frac{5}{12}$ $36 = 5x \Rightarrow x = \frac{36}{5} = 7.2$

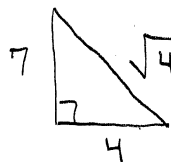
(c) $\frac{12}{22} = \frac{x-5}{x}$
 $12x = 22(x-5)$
 $12x = 22x - 110$
 $110 = 10x \Rightarrow x = 11$

2. (1.5 points) A grasshopper can jump 20 times its length. If jumping ability in humans was proportional to a grasshoppers, how far could a 6-ft tall person jump?

$l = \text{LENGTH OF GRASSHOPPER}$ $\frac{20l}{l} = \frac{20}{1} = \frac{x}{6} \Rightarrow x = 120 \text{ FT}$

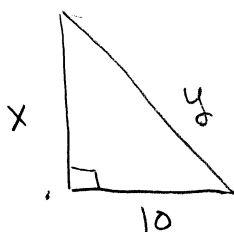
3. (4 points) A right triangle has legs of length 4 and 7.

- (a) Find the length of the hypotenuse.



7 $\sqrt{49+16} = \sqrt{65} \approx 8.06$

- (b) A similar right triangle has its shortest leg of length 10. Find the length of the other leg and the hypotenuse.



$\frac{4}{7} = \frac{10}{x} \Rightarrow 4x = 70$
 $x = \frac{70}{4} = 17.5$

$\frac{4}{\sqrt{65}} = \frac{10}{y} \Rightarrow 4y \approx 80.6$
 $y \approx 20.15$